

INFOTECH

# Beyond Googling:

## Applying Google Tools to Inquiry-based Learning

Annette Lamb and Larry Johnson

I'm going to "google it".  
My source is "google".  
I learned it on "google".  
I love "googling"!

Do these statements sound familiar? A growing number of teacher-librarians are concerned when they hear students are "googling" rather than critically thinking about the best sources of information. Many students have only used the Google Web Search option and are unaware of the many ways Google's tools and applications can be used throughout the research process.

### GOOGLE TOOLS IN TEACHING AND LEARNING

As teacher-librarians we should help young people learn how Google tools available for accessing, organizing, and sharing information can facilitate learning. Rather than teaching these tools in isolation, use a subject area activity such as exploring a mathematical theorem, examining an endangered species, or addressing a social problem. Consider selecting an object as the focus of an investigation. For instance, an inquiry might be based on investigating a particular invention such as the "butter churn" or "Velcro." Finally, books are effective for creating a shared inquiry experience. Explore the facts behind an environmental mystery or examine the history of a famous disaster.

As you explore subject area applications, consider the ways Google tools can be used in teaching and learning. Let us use the topic of fire disasters and specifically the Triangle Shirtwaist Factory Fire of 1911 to learn about the options and opportunities for these tools. While reading the historical fiction novel *Uprising* by Margaret Peterson Haddix (2007), young people are likely to have many questions about the famous fire discussed in the story. Use this article to jumpstart an inquiry using Google tools.

This article will explore four areas of Google tools and applications including information; multimedia, collaboration, creation, and communication; and experimental features.

### GOOGLE FOR INFORMATION

When people go to the main screen of Google's web site, <http://google.com>, they most often click in the empty box, enter word(s), and click "Google Search". Without realizing it, they are using Google's "Web Search" option. However this is only one of dozens of tools available at this wonderful web site.

**Google Web Search.** Begin by doing a basic search for "triangle shirtwaist fire". Encourage students to explore the options in the "Advanced Search" link to refine their search. For instance, they may use the site or domain search to focus on materials available at the New York Public Library. To do this, add "site:nypl.org" to their search string. Or, they might seek out PowerPoint presentations on the topic by adding "filetype:ppt" to their search.

As students click on the links provided by Google, remind them that they are leaving the Google web site. Make students aware of the change in the web address (URL) in the location bar of their web browser. Ask them to determine whether this is a credible web site. Wikipedia's article about the Triangle fire provides background information and is only useful as a tertiary source, while the online exhibit from Cornell University about the Triangle fire, <http://www.ilr.cornell.edu/trianglefire>, contains digitized primary source documents and authoritative resources.

**United States Government Search.** By using the *US Government Search*, <http://google.com/unclesam>, students are able to focus on authoritative resources provided by local, state, and national sources. The National Park Service and New York City Fire Department are two examples of organizations that provide resources on the Triangle fire that might be lost among the commercial sites found in a standard Google Search.

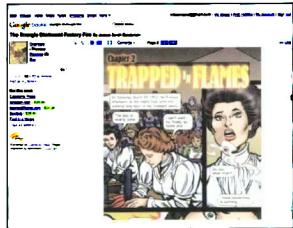
**Country Search.** Google provides access to resources in many countries around the world. Searching by country can be important in some research projects. For instance, students might use *Google Canada*, <http://google.ca>, to learn about Canada's greatest fire disasters.

**Google Blog Search.** New information is constantly being added to the Web. Doing a blog search allows students to find recently posted information about their topic. A *Google Blog Search*, <http://blogsearch.google.com>, of the Triangle fire provides a link to a *New York Times* blog entry, <http://www.nytimes.com/2009/06/21/nyregion/21book.html>, with information about a new book about a witness to the fire. This web site would be lost among the thousands of links found in the regular web search.

**Google News.** Like the blog search, a news search provides recently posted information. However it also allows access to archives that can be sorted by date so it is possible to read original news articles from 1911.

Using the timeline in the archives, users can get a sense for the chronology of a topic. For instance, science students can trace the debate about an endangered species over time.

**Google Books.** In addition to web site information, books are also available through the Web. *Google Books*, <http://books.google.com>, provide limited and full views of millions of digi-

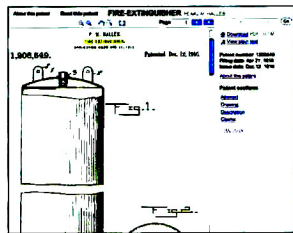


**Figure 1.** Google Book example—Triangle Shirtwaist Factory Fire.

tized books. Students can read chapters of a graphic novel called the *Triangle Shirtwaist Factory Fire* (2006) by Jessica Sarah Gunderson (see Figure 1) or scan a few pages of an outstanding nonfiction text by Dave Von Drehle (2007) on the topic. For more information, students can check out a physical copy of the book from the library.

**Google Scholar.** An excellent choice for high school students, *Google Scholar*, <http://scholar.google.com>, accesses professional journals, books, reports, and other scholarly works. In the case of the Triangle fire, many of the links explore the effect of the disaster on future labor laws and safety regulations. When studying a topic such as endangered species, scientific journals would be listed.

**Google Patent Search.** Connecting a topic to patents, invention, and innovation is a way to motivate reluctant learners. When studying the Triangle fire, students might brainstorm fire safety equipment that may or may not have been available in 1911. *Google Patent Search*, <http://google.com/patents>, provides patents on inventions such as the fire hose, fire extinguisher, and fire escape. These digitized



**Figure 2.** Google Patent of fire extinguisher.

primary sources include both drawings and descriptions (see Figure 2).

## GOOGLE FOR MULTIMEDIA

While the standard Google information searches access text-rich web sites, students often need maps, photographs, diagrams, video, and multimedia resources for a broader understanding of a topic.

**Google Images.** Students are likely to have experience using Google images. In the case of the Triangle Shirtwaist Fire, students may wish to see diagrams of the building and photographs from the scene. Use *Google Images*, <http://images.google.com>, for this type of graphic information.

When using Google images, remind students about the copyright law and point out that the images are located on individual web sites apart from Google. Students must cite the individual web sites, not Google. Also, make them aware of the image sizes. The "show options" choice allows users to view particular image sizes and file types.

**Google Video.** Google owns the *YouTube*, <http://youtube.com>, web site. When you search *Google Video*, <http://video.google.com>, you will see mostly YouTube videos, however there are videos from other sources. This is useful in a school library situation where students may not have access to YouTube.

Teach students to use the "show options" choice to view videos by duration, time, relevance, quality, type, and source. The "closed captioned" option is particularly useful for students with special needs.

When searching for information about the Triangle fire, young people will be able to locate professional documentaries as well as student-produced projects.

**Google Maps.** For some students, maps can bring an event alive. *Google Maps*, <http://maps.google.com>, provides a forum for people to share their understanding of place. In addition to the accessing satellite images, terrain visuals, and maps, participants can upload photographs, slide shows, and information.

Students in New York have created movies showing the places where victims and survivors of the Triangle fire lived (see Figure 3).



**Figure 3.** Google Map of Triangle fire victims and survivors.

**Google Earth.** Like Google maps, *Google Earth*, <http://earth.google.com>, provides satellite images and mapping tools for accessing places on Earth. In addition, this free-download software allows access to ocean and sky information along with images from the Moon and Mars.

The multimedia aspects of Google are just beginning. Projects such as *Google 3D Warehouse*, <http://sketchup.google.com/3dwarehouse>, provide tools for building and sharing 3D models. Many of these can be found in Google Earth.

Google is experimenting with ways to make multimedia searching and access easier. Google's *Audio Indexing*, <http://labs.google.com/gaudi>, project is an example.

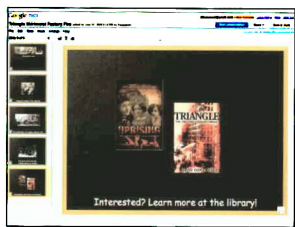
## GOOGLE FOR COLLABORATION, CREATION, & COMMUNICATION

Beyond the text and multimedia resources available, Google has also introduced a wide range of tools for organizing and sharing information. From posting due dates on a web-based calendar to designing collaborative presentations, these tools meet the needs of busy students who want to work on their assignments anywhere, anytime.

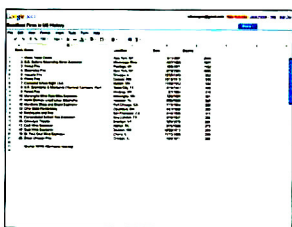
Google applications require that students have a Google account. This personal account makes it easy for young people to work at home or at school.

**Google Chrome.** Along with Internet Explorer and Firefox, many students are now using *Google Chrome*, <http://google.com/chrome>, to access web content. This web browser has many built-in features





**Figure 4.** Presentation option in Google Docs.



**Figure 5.** Spreadsheet option in Google Docs.

that make it easy to use Google's tools.

**iGoogle.** With *iGoogle*, <http://google.com/ig/directory>, students can set up a customized resource and information page. From calculators and vocabulary gadgets to blog feeds and local news, this is a great way for young people to easily access the tools they need.

**Google Reader.** Many teachers require their students to regularly check web feeds including class blogs, news feeds, and on-line journals. *Google Reader*, <http://reader.google.com>, could be used to check NASA's Breaking News, Scientific American's blog, and public radio's Earth and Sky podcasts.

**Google Calendar.** With *Google Calendar*, <http://google.com/calendar>, students can access class or library calendars and create their own project calendars.

**Google Gmail.** *Gmail*, <http://gmail.com>, is a great way for teachers to keep in touch with their students. These email accounts are easy to maintain and have an excellent built-in spam filter.

**Google Talk.** With *Google Talk*, <http://google.com/talk>, young people can collaborate on projects around the world using both video and voice.

**Google Docs.** Word processing, spreadsheet, and presentation applications are just a few of the productivity tools available in *Google Docs*, <http://docs.google.com>. These applications allow students to work, collaborate, share, and publish from any computer, anytime, anywhere.

In the historical fiction project, students wrote reviews in the word processor, creating disaster spreadsheets (see Figure 4), and built book talk presentations (see Figure 5).

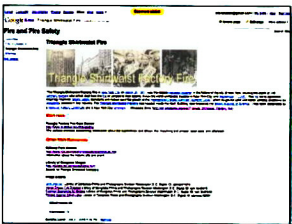
**Google PicasaWeb.** With *Google PicasaWeb*, <http://picasaweb.google.com>, stu-

dents can save and organize digital images including photographs, drawings, and diagrams. These images can then be published individually or in slide shows.

**Google Groups.** Virtual book clubs, on-line debates, and class discussions are just a few of the applications of *Google Groups*, <http://groups.google.com>. Students can participate in exciting groups or set up their own group for book discussions or collaborative project planning.

**Google Blogger.** Blogs are an effective, efficient, and appealing way to log an inquiry project. Students create blog entries related to each phase of the inquiry process including brainstorming topics, creating deep questions, identifying search words, evaluating results, synthesizing information, and creating products. *Google Blogger*, <http://blogger.com>, provides easy-to-use tools for creating, editing, and sharing blog entries.

**Google Sites.** Whether creating a library web site or building a class project, *Google Sites*, <http://sites.google.com>, provides templates for creating and sharing web pages (see Figure 6). Students can embed multimedia elements and even request feedback through page comments.



**Figure 6.** Google Sites example.

## BOOKMARKIT

SUZANNE HAROLD



### WEB SITES

## AMERICAN CIVIL WAR

### FOR EDUCATORS:

#### Africans in America Part 4:

**Judgment Day.** [www.pbs.org/wgbh/aia/part4/title.html](http://www.pbs.org/wgbh/aia/part4/title.html). Web site features thorough information from PBS on slavery, abolition, fugitive slaves, Northern racism, Westward expansion, and the Civil War. Each section includes a narrative, information about people and events, historical documents, interviews with modern historians, and teacher's guide.

**Civil War Cooking.** [civilwarinteractive.com/cooking](http://civilwarinteractive.com/cooking). This informally written blog contains recipes from Civil War time, plus tips and tutorials on nineteenth-century cooking. Entries include a Civil War wedding and the history of catsup.

**Civil War Women.** [library.duke.edu/specialcollections/ingham/guides/cwdocs.html](http://library.duke.edu/specialcollections/ingham/guides/cwdocs.html). Diaries, letters, photographs, and prints documenting the lives of women during the Civil War. Read the letters of Rose O'Neal Greenhow a Confederate spy and diary entries of a 10-year-old girl in Atlanta. The collection includes diaries and letters, photographs and prints, and is maintained by Duke University Libraries.

**National Park Service—the American Civil War.** [cwar.nps.gov/civilwar](http://cwar.nps.gov/civilwar). The National Park Service provides an overview, stories, timelines, information on African Americans soldiers, a searchable index of soldiers and sailors, teacher resources, and information on events surrounding the 150-year anniversary of the Civil War (2011-2015).

**Valley of the Shadow.** [valley.lib.virginia.edu](http://valley.lib.virginia.edu). See firsthand how the Civil War affected two communities—one Northern, one Southern—through a variety of primary source material. "Using the Valley Project" provides teacher resources for grades 7-12.

Knol. Through *Knol*, <http://knol.google.com>, students can access and create simple web pages to share their work. The collaborative environment allows developers to request feedback and ratings from others.

**Google Wave.** When all of these innovative applications are put together, users get *Google Wave*, <http://wave.google.com>. Allowing real-time communication and collaboration, Google Wave combines the power of email, chat, and forums with social technology tools such as media sharing and polling. Young people using this tool for project collaboration have a wonderful record of their work to share with teachers.

### GOOGLE EXPERIMENTATION

Google is constantly changing. An area called *Google Labs*, <http://googlelabs.com>, is used to try out emerging technologies. Many of these projects such as *Google Sets*, <http://labs.google.com/sets>, and *Google Squared*, <http://www.google.com/squared>, have practical applications in teaching and learning.

Tools such as *Google Trends*, <http://google.com/trends>, *Google Health*, <http://health.google.com>, *Google Finance*, [\[www.google.com/finance\]\(http://www.google.com/finance\), and \*Google Translate\*, <http://translate.google.com>, began in Google Labs and are now a regular part of Google's tools.](http://</a></p></div><div data-bbox=)

### GOOGLE AND THE TEACHER-LIBRARIAN

A quick way to learn more about the options available at Google is to do a Google search for "google". You will find a great list of the many things that Google offers beyond the basic web search tools.

Learn more about Google as a company through Google's organization page, <http://google.org>, and Google's blog, <http://blog.google.org>. These are also useful in identifying emerging technologies.

In addition to their commercial work, Google is also involved with many philanthropic projects. For instance, *Google Flu Trend*, <http://google.org/flu Trends>, is used to track flu activity around the world.

*Google Educators*, <http://google.com/educators>, provides support for educators using Google in the classroom including news, information, tutorials, and lots of teaching ideas.

### CONCLUSION

*We question and evaluate.*

*We know the source.*

*We think, create, share, and that's why we like Google.*

These are the kinds of student statements that come from an understanding of Google's tools. The focus is no longer on "googling", but on applying the wide range of tools and applications to meaningful inquiries.

### BOOKS MENTIONED

Dembar Greene, Jacqueline and Dave Von Drehle. *The triangle shirtwaist factory fire*. Bearport Publishing, 2007. 978-1-59716-359-0.

Gunderson, Sarah. *Triangle shirtwaist factory fire*. Capstone, 2006.


Peterson Haddix, Margaret. *Uprising*. Simon & Schuster, 2007. 978-1-4169-1171-5.

Adapted from *Beyond Googling: Applying Google Tools to Teaching and Learning*. Example links can be found at <http://www.eduscapes.com/sessions/google>.

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Rachelle Lasky Bilz: Author of *Life Is Tough: Guys, Growing Up, and Young Adult Literature*; freelance writer; retired high school librarian. [bilzrm@gmail.com](mailto:bilzrm@gmail.com)

Reid Goldsborough: Author of *Straight Talk About the Information Superhighway*. [reidgold@netaxs.com](mailto:reidgold@netaxs.com), <http://members.home.net/reidgold>.

Suzanne Myers Harold: School Corps Librarian, Multnomah County Library, Portland, OR. [suzharold@gmail.com](mailto:suzharold@gmail.com).

Sara Catherine Howard: Adjunct instructor, Department of Library Science, Sam Houston State University, Huntsville, TX. [lis\\_sch@shsu.edu](mailto:lis_sch@shsu.edu).

Larry Johnson: Professor, School of Library and Information Science, Indiana University—Perdue University, Indianapolis, IN. [ljohnson@mail.escapes.com](mailto:ljohnson@mail.escapes.com).

Erlene Bishop Killeen: District Media Coordinator and Elementary Library Media Specialist for the Stoughton Area School District; adjunct instructor at the University of Wisconsin, Oshkosh. [erlene.killeen@stoughton.k12.wi.us](mailto:erlene.killeen@stoughton.k12.wi.us).

Annette Lamb: Professor, School of Library and Information Science, Indiana University—Perdue University, Indianapolis, IN. [alamb@eduscapes.com](mailto:alamb@eduscapes.com).

David Loertscher: Coeditor of *Teacher Librarian*; professor, School of Library and Information Science, San Jose State University, San Jose, CA; president of Hi Willow Research and Publishing; and past president of the American Association of School Librarians. [dloertscher@teacherlibrarian.com](mailto:dloertscher@teacherlibrarian.com).

Elizabeth "Betty" Marcoux: Coeditor of *Teacher Librarian*; assistant professor, Information School, University of Washington. [b.marcoux@verizon.net](mailto:b.marcoux@verizon.net).

Kathleen Odean: Librarian, speaker, and author of *Great Books for Girls* (revised 2002) and other guides. Rhode Island. [kathleenodean@hotmail.com](mailto:kathleenodean@hotmail.com), [www.kathleenodean.com](http://www.kathleenodean.com).

John Peters: Supervising Librarian of the Children's Center at 42nd Street, The New York Public Library, New York. [cj071@yahoo.com](mailto:cj071@yahoo.com), <http://tinyurl.com/59s5jp>.

Julie M. Prince: Freelance writer and reviewer of books for children and young adults. [www.julieprince.com](http://www.julieprince.com).

Joe Sutliff Sanders: Assistant professor of children's and young adult literature, California State University. [jocss@csusb.edu](mailto:jocss@csusb.edu).

Joanne Troutner: Director of media/technology, Tippecanoe School Corp, and owner, Creative Computer Enterprises, Lafayette, IN. [troutner@mindspring.com](mailto:troutner@mindspring.com), [www.jtroutner.com](http://www.jtroutner.com).

Betty Winslow: Media center director, Bowling Green Christian Academy, Bowling Green, OH. [freelancer@wcnet.org](mailto:freelancer@wcnet.org).

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